

The first of these is the fact that the
  $\text{H}^+$  ions are not free to move in the
 solution, but are bound to the
  $\text{SO}_4^{2-}$  ions. This is because the
  $\text{H}^+$  ions are attracted to the
 negative charge of the  $\text{SO}_4^{2-}$  ions,
 and form a "hydration shell" around
 them. This shell is made up of
 water molecules, with the hydrogen
 atoms of the water molecules
 pointing towards the  $\text{H}^+$  ions.
 This shell is very stable, and
 the  $\text{H}^+$  ions are not free to
 move away from the  $\text{SO}_4^{2-}$  ions.
 This is why the conductivity of
  $\text{H}_2\text{SO}_4$  is so high, even though
 the  $\text{H}^+$  ions are not free to
 move.